

# ***Earned Value***

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## **The New Management Revolution: Integrating Contractor Performance with Agency Budgets**

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ASMC PDI '97

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# Outline

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- Review - Earned Value Concept
- Acquisition Reform Legislation
- Office of Management & Budget
  - » Circular A-11 Part 3
    - Principles of Budgeting for Capital Asset Acquisitions
    - Capital Programming Guide
- Relationships & Summary

# The Punchline

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*Before we  
get into all  
the details  
let's talk  
basics*



- General consensus:

***The Federal Government needs to better manage*** the planning, budgeting and acquisition of fixed assets, including information technology

# Purpose of Earned Value: Effective Management

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**Contract:** 4 miles of railroad track in 4 weeks for \$4 million.  
**Status:** After 3 weeks, only \$2 million has been spent.  
**Question:** How are you doing (and how do you know)? \*

## *Spend Plan*

- » Planned \$1M/week
- » Planned \$3M to date
- » Actual cost \$2M
- » \$1M favorable???

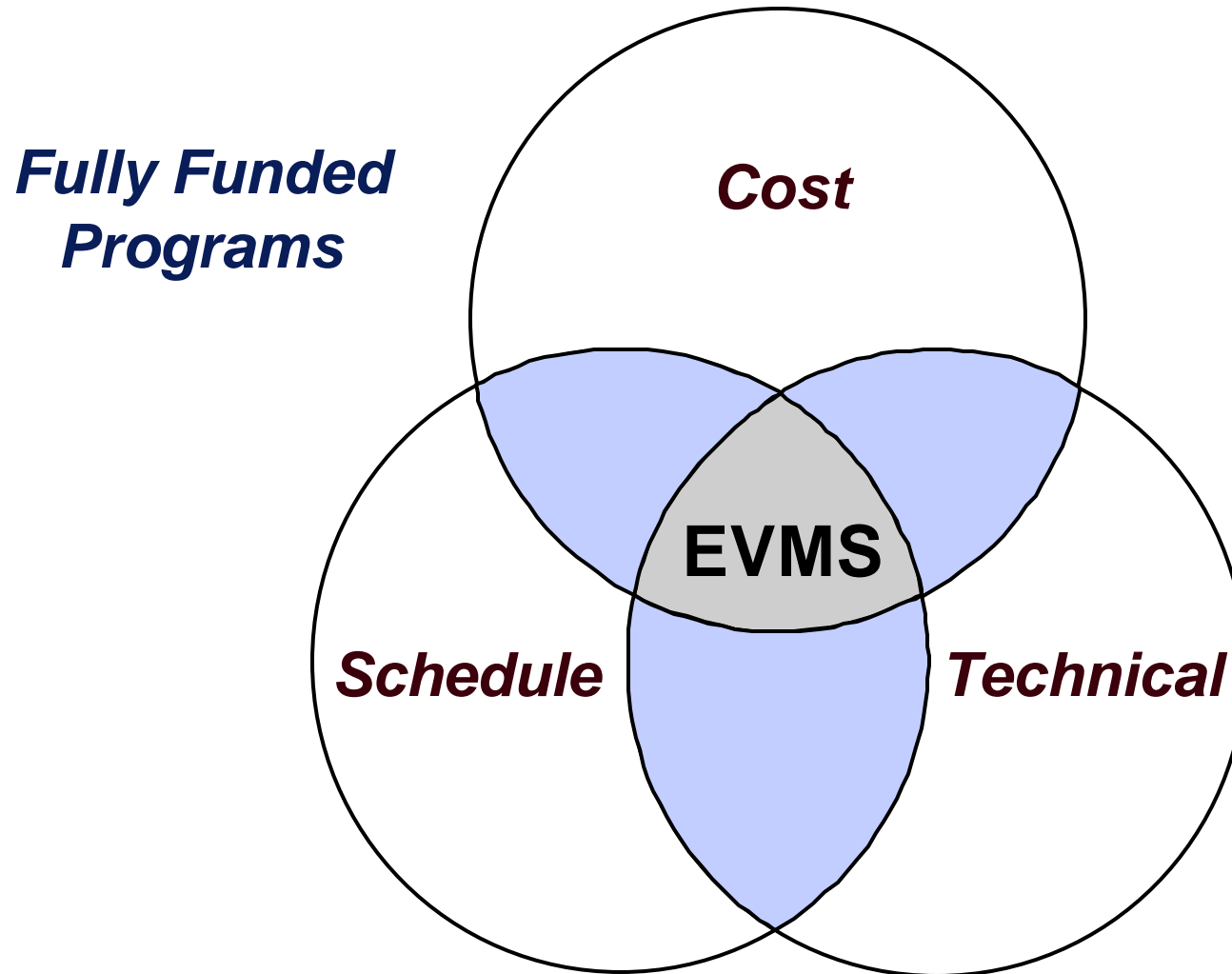
## *Earned Value*

- » Planned \$1M/week
- » Planned \$3M to date
- » **Earned \$1M** (66% behind)
- » Actual \$2M (100% overrun)
- » EAC \$8M, 8 weeks late

\* Source: GAO Report May 97

# Earned Value: Integrated Management

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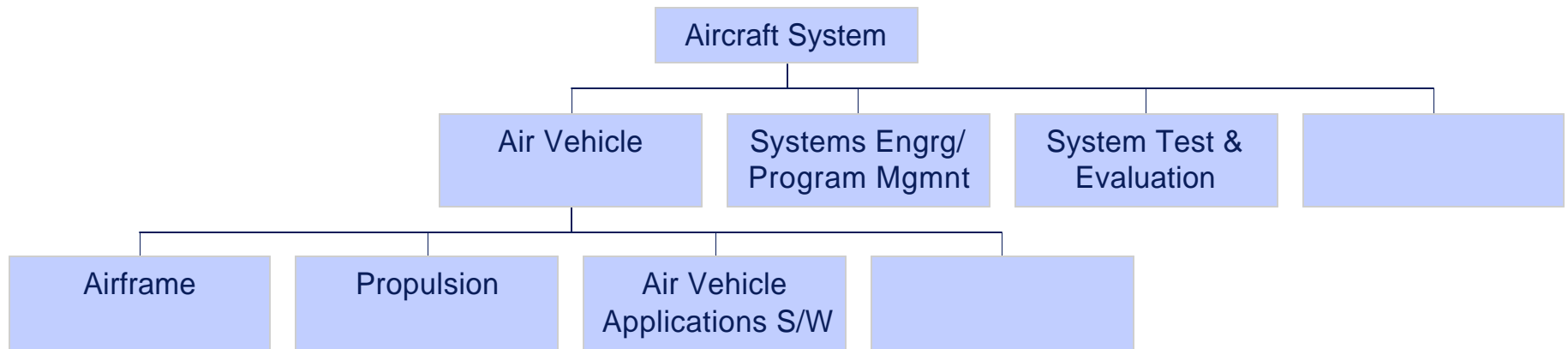


# Integrated Management

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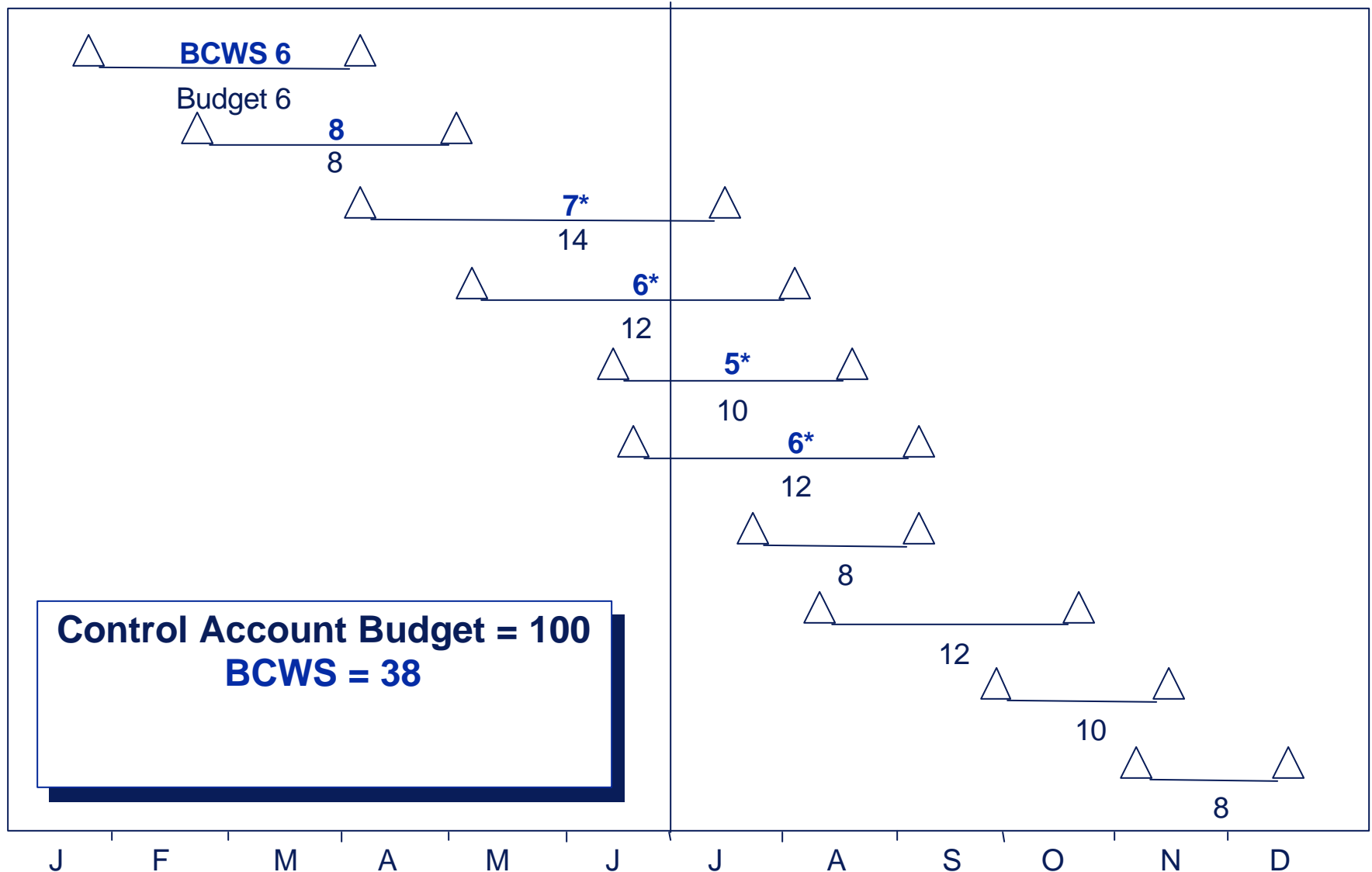
***Program “Dictionary” (defines the program)***

Work Breakdown Structure



# Earned Value Concept

*Budgeted Cost for Work Scheduled (what you planned to do)*

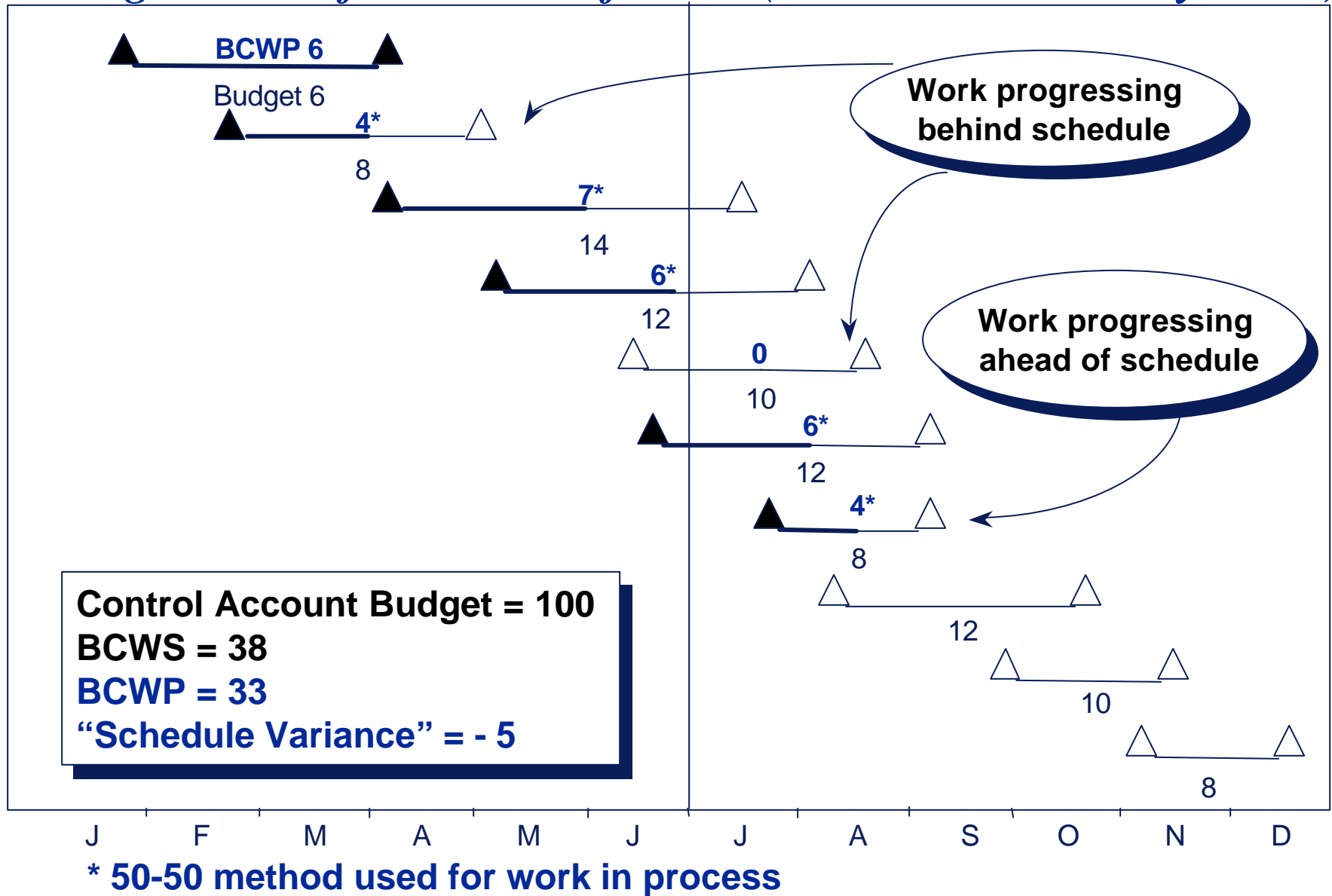


\* 50-50 method used for work in process



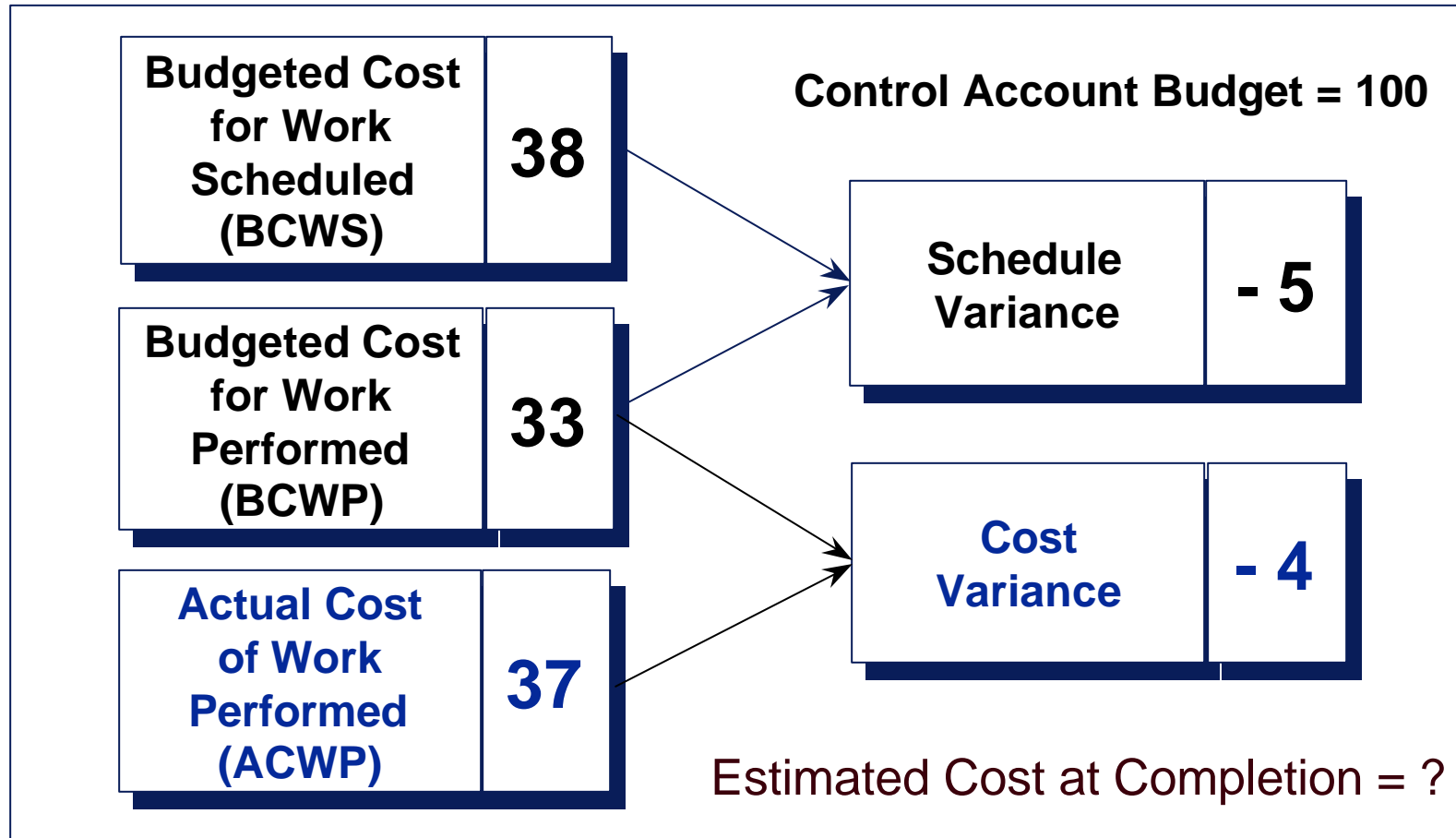
# Earned Value Concept

*Budgeted Cost for Work Performed (Earned Value-what you did)*



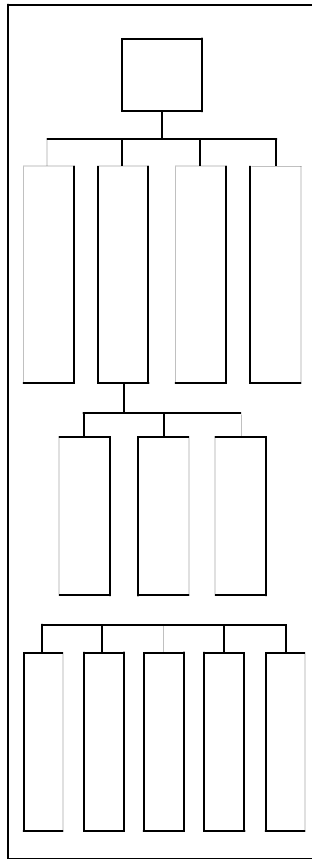
# Earned Value Concept

*Actual Cost of Work Performed (what it cost to do what you did)*

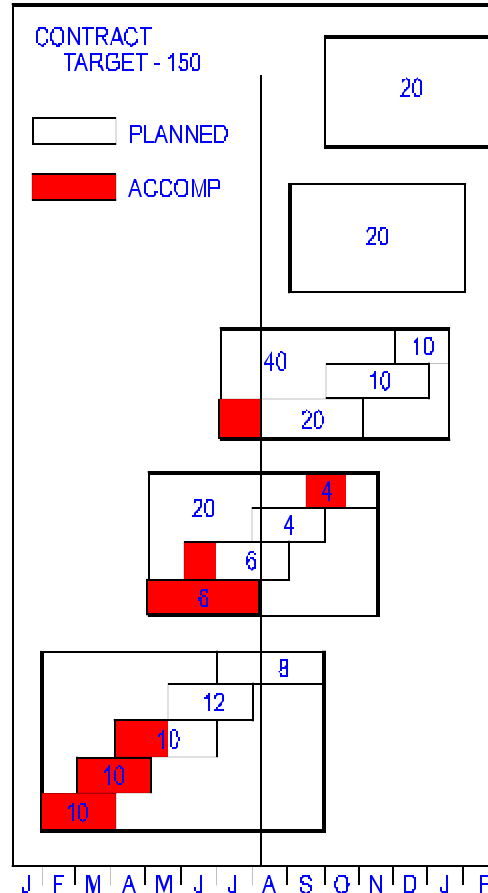


# The Earned Value Concept Summary

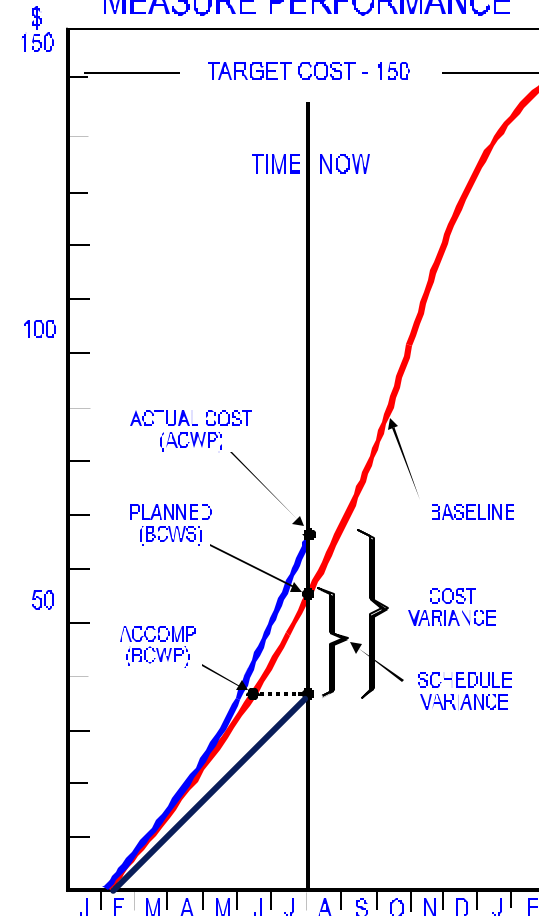
## DEFINE THE WORK



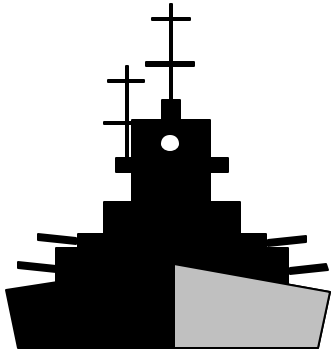
## SCHEDULE AND BUDGET



## MEASURE PERFORMANCE



# Earned Value Management: Origins



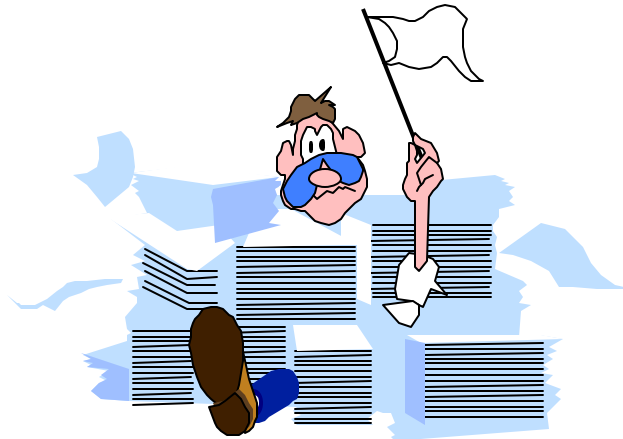
## **1960s-**

- Complex Programs
- Multiple Customers
- Need for Improved Management



## ***PERT COST***

- Resource-loaded networks
- 10 versions by '64

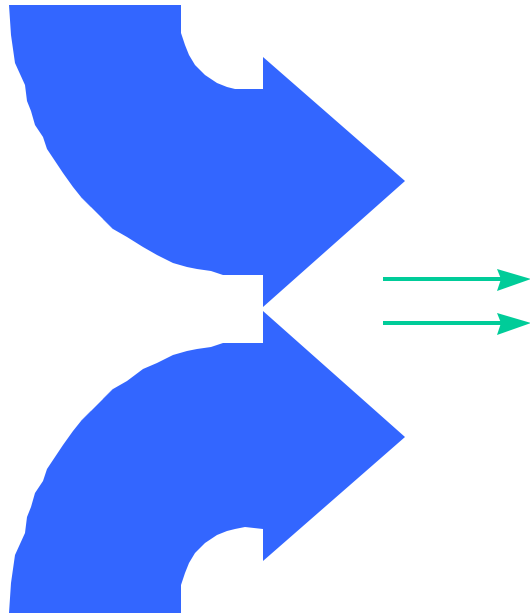


- ## ***Industry Issues:***
- “How-to-manage”
  - Inefficiency

# Earned Value Management: Origins (cont'd)

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**Industry Best  
Practices**



**Government  
Requirements**

**1967: DoD Instruction 7000.2**  
**Cost/Schedule Control Systems**  
**Criteria (C/SCSC)**

***Criterion-based Management***

- Brief statements of attributes
- Not “how-to”
- Not a system
- Minimum acceptable standard

**1997: DoD Regulation 5000.2-R**  
**Earned Value Management**  
**Systems (EVMS) Criteria**

# Earned Value Policy: DoD 5000.2-R, Appendix VI

- **32 Criteria:**

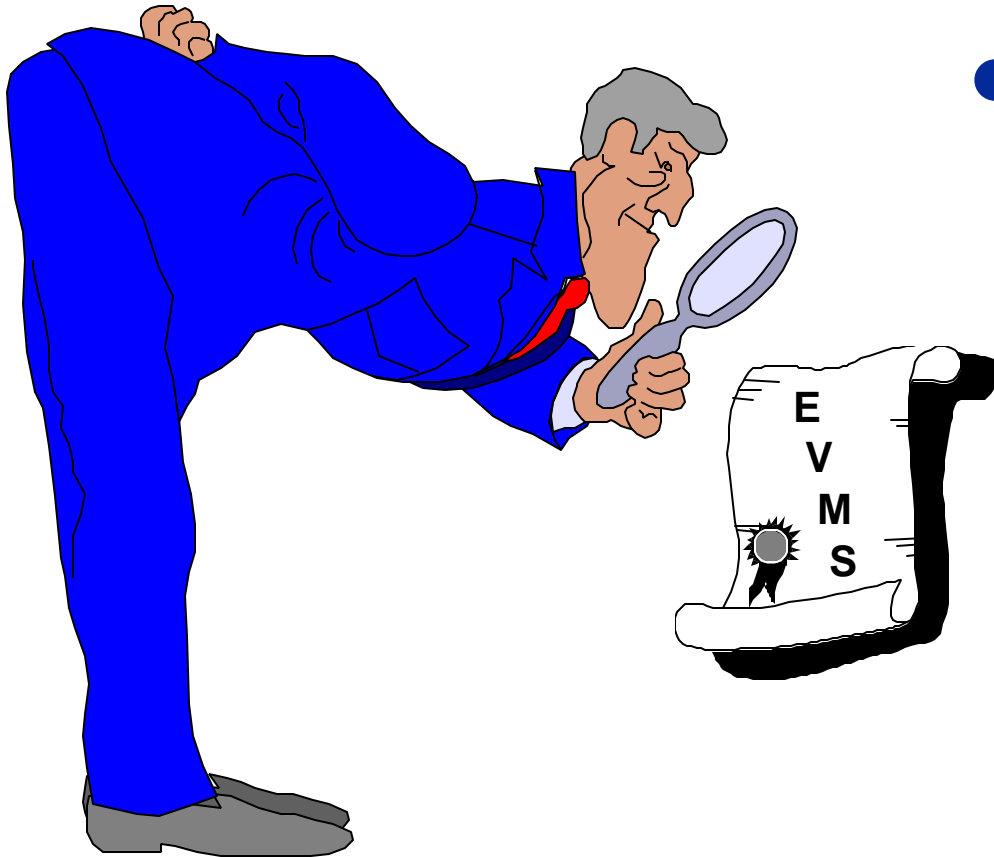
- » Organization
- » Planning, Scheduling & Budgeting
- » Accounting Considerations
- » Analysis & Management Reports
- » Revisions & Data Maintenance

- Mirrors Industry Guidelines



# DoD Earned Value Policy

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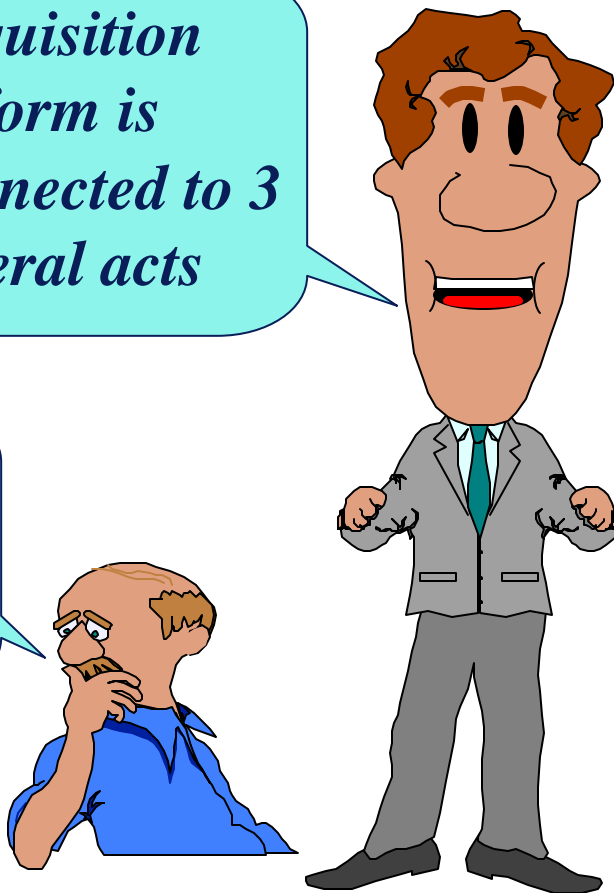
## ● Reaffirmed-

- » ADL Study - 1984
- » TQM Report - 1991
- » DoDI 5000.2 - 1991
- » DoDIG Report - 1993
- » C&L/TASC - 1994
- » DoD 5000.2-R - 1996
- » OMB Circular A-11  
Part 3 - 1996
- » GAO Report - 1997

# Reform Legislation

*Acquisition Reform is connected to 3 federal acts*

*Is there an inter-mission ?*



- Government Performance and Results Act (GPRA), 1993
- Federal Acquisition Streamlining Act (FASA), (Title V), 1994
- Information Technology Management Reform Act (ITMRA), 1996
  - » “Clinger/Cohen”



# Purpose of the Acts

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## **GPRA**

**Provides for establishment and evaluation of performance standards and goals for expenditure of the Federal budget**

## **FASA(V)**

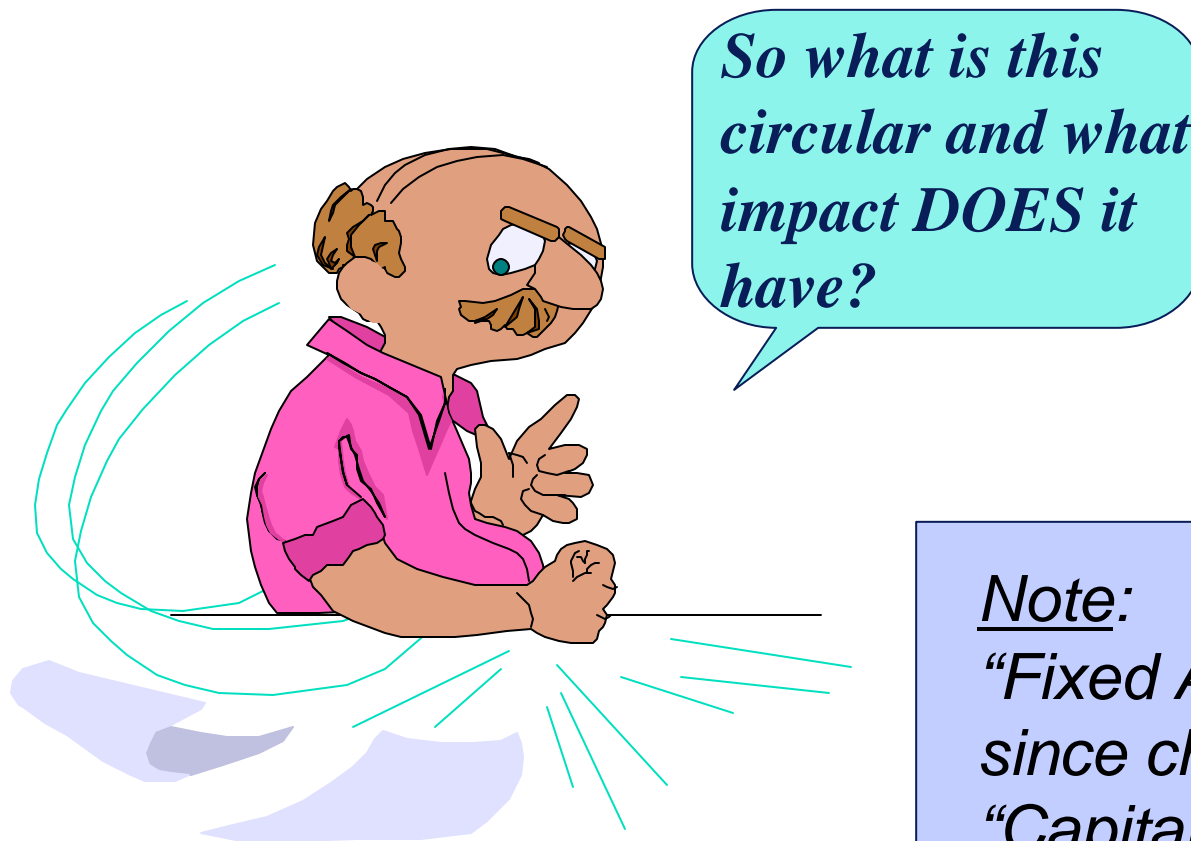
**Requires reporting of cost, schedule and performance goals for asset management and evaluation of progress**

## **ITMRA**

**Requires reporting of performance in information systems acquisition**

# Circular A-11, Part 3: Planning, Budgeting & Acquisition of Fixed Assets

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Note:

*"Fixed Asset" has since changed to "Capital Asset"*

# A-11 Part 3 Objectives

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## **It is designed to**

- provide guidance and identify requirements for planning, budgeting and acquisition management of fixed assets
- unify guidance for the collection of agency information that FASA and ITMRA require OMB to report to Congress
- ensure that acquisition plans support the mission statements, performance goals and plans developed per GPRA

# Capital Assets: Definition

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- Capital assets are
  - » Land, Structures, Equipment
  - » Intellectual property (including software)
  - » Useful life of two years or more
  - » Additions, improvements, replacements
- Capital assets may be acquired by
  - » Purchase, construction, manufacture
  - » Lease-purchase or other capital lease
  - » Operating lease

# Capital Assets: Examples

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- Office buildings
- Hospitals, schools
- Laboratories
- Prisons
- Dams, power plants
- Furniture, elevators
- Printing presses
- Motor vehicles
- Airplanes, ships
- Satellites
- Space exploration equipment
- Info. technology hardware/software
- DoD weapons systems
- etc.....

# A-11, Part 3 (cont'd)

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*A-11 also addresses issues regarding full funding, a new idea for some agencies.*



# Principles of Budgeting for Capital Asset Acquisitions

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- Planning

- » Supports core mission
- » ROI > alternative uses of public resources
- » Risk is understood

- Costs & Benefits

- » Including life-cycle
- » ***Cost/Sched/Perf goals measurable using EVMS***

- Principles of Financing

- » Fully funded

- Risk Management

- » Analyzed & managed
- » Appropriate allocation
  - Government
  - Contractor
- » ***Controlled & monitored using EVMS***
- » Formal review process

# Performance Measures

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## Strategic Goals

- Mission
- Long-term Goals

## Performance Goals

- Annual goals
- Specific element of a strategic goal

## Performance Indicators

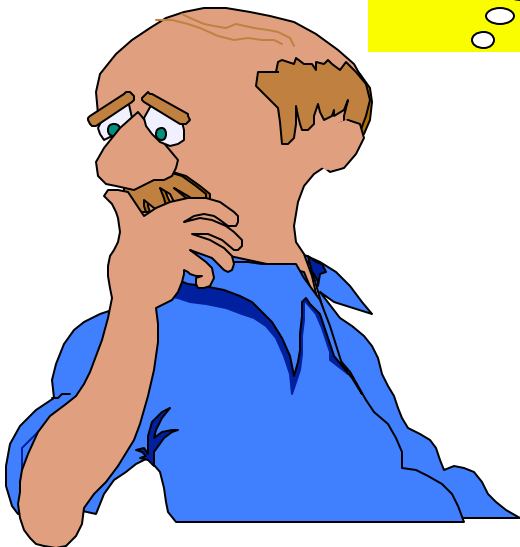
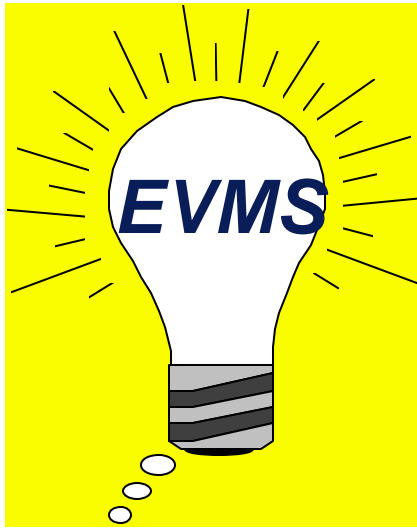
- A measure of progress toward a performance goal
  - quantity
  - quality
  - timeliness
  - cost
  - outcome

### ***“Three Pesky Questions:”***

- 1. Is function tied to agency mission?***
- 2. Could another entity do it better?***
- 3. Have processes been reengineered to give best performance at lowest cost?***



# Performance-based Management: The Key?

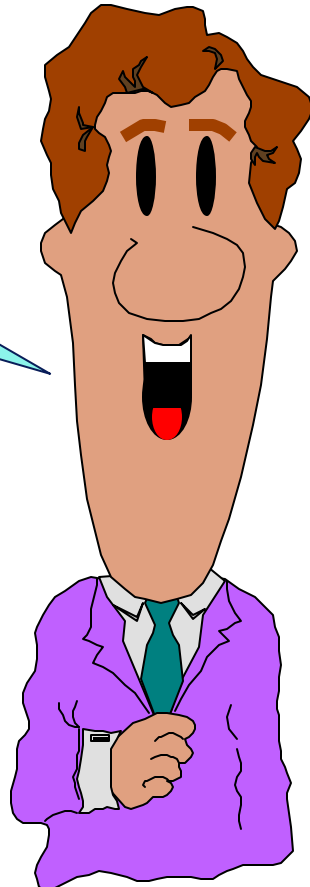


- Shift focus to program execution
- Provide for regular and systematic measurement of program performance compared to goals
- Emphasize results (outcomes and outputs)

# Baseline Goals

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*So what gets  
reported to  
OMB?*



- Cost and Schedule Goals
- Performance Goals

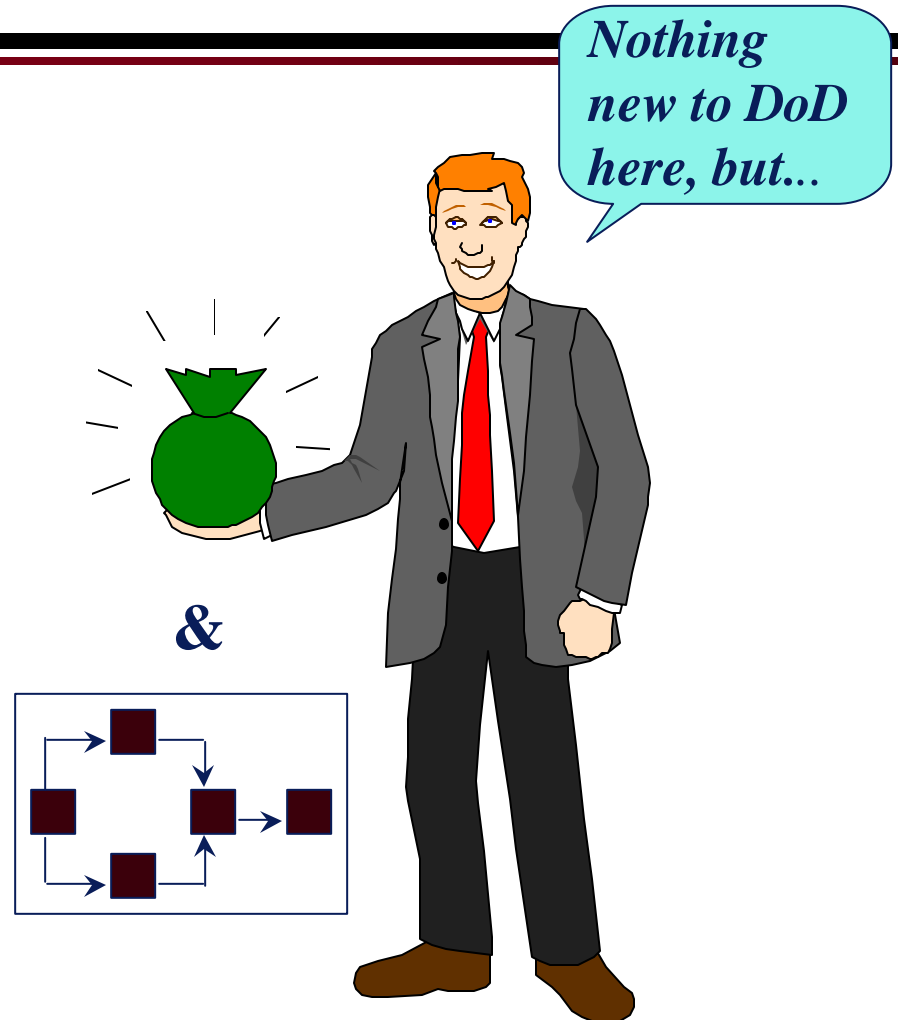
# Cost and Schedule Goals

- Cost

- » Total project cost
- » Timephased by stage

- Schedule

- » Total duration
- » Significant interim milestones



# Cost and Schedule Variance Reporting

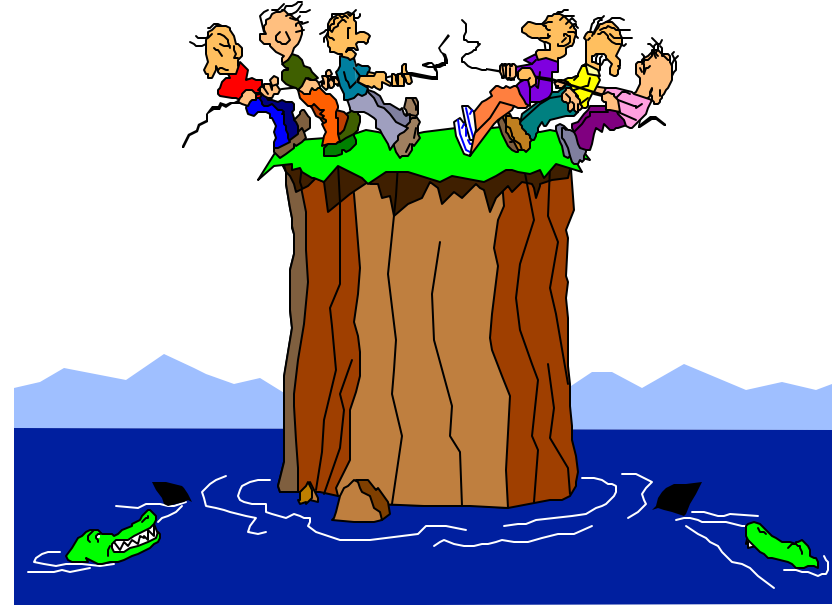
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- If cost or schedule is 10% or more above or behind plan, respectively
  - » Analyze variances
  - » Discuss corrective actions
  - » Propose revisions if goals can't be met



# Performance Goals

- These should clearly define the technical or other results expected
- Wherever possible, they should be quantitative
- Describe the probability of accomplishment, i.e. what is the degree of

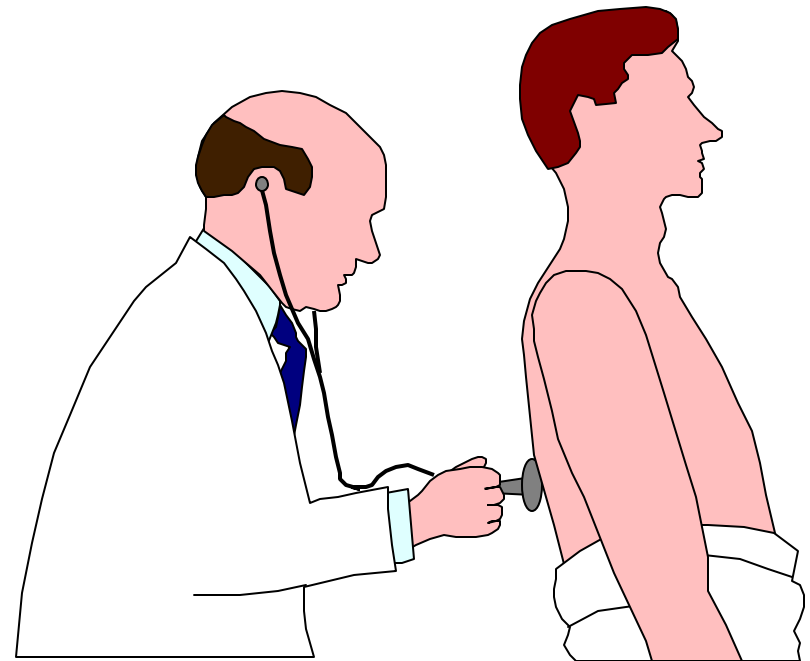


*Risk*



# Performance Goal Variance Reporting

- If there is any\* deviation from the baseline plan for performance goals
  - » Analyze variances
  - » Discuss corrective actions
  - » Propose revisions if goals can't be met



\* 10% for DoD

# Management Alternatives

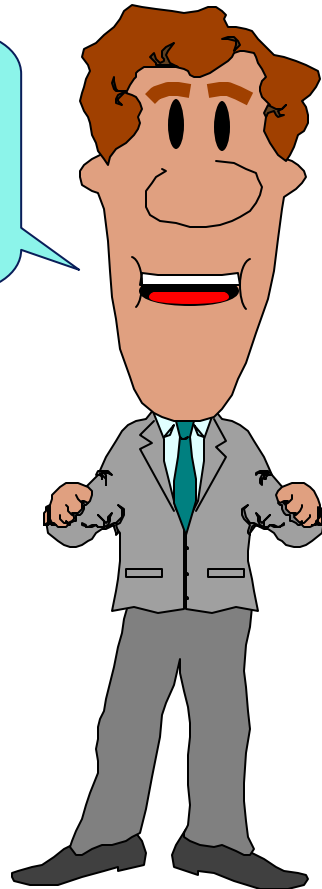
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- Find the resources
- Adjust program to stay within resources
  - » Must meet baseline goals unless OMB approves revisions
  - » Proposed revisions must be justified, with an estimated probability of achievement
- Cancel?

# Earned Value Management and A-11 Part 3

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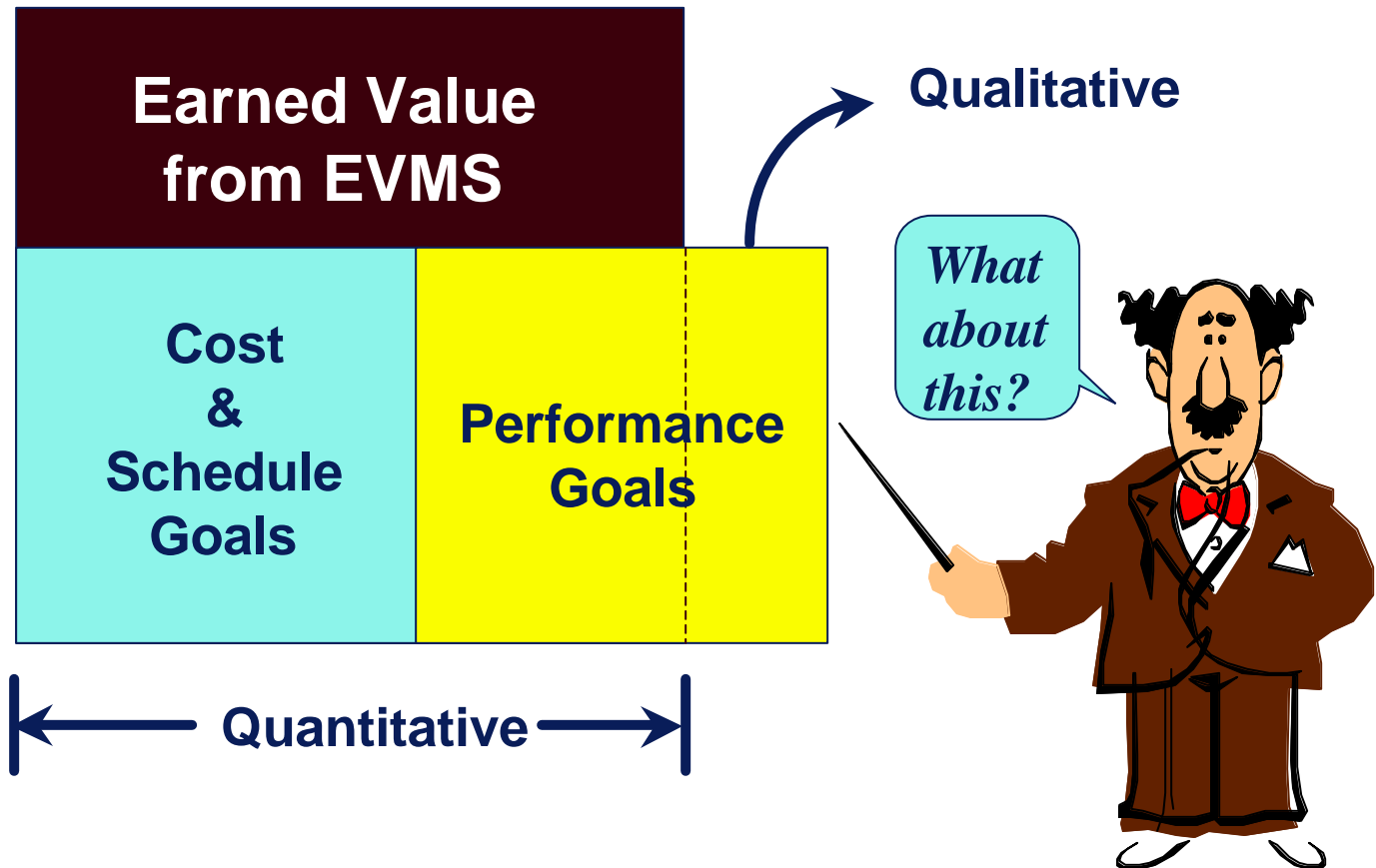
*A-11 sees a  
key role for  
EVMS*



- A-11 requires a description of the performance-based management system used by contractors
- Asks whether it is an EVMS system and, if not
- Explain how the system provides measures of accomplishment vs planned schedule and actual cost



# Earned Value and A-11, Part 3



# The Next Steps

- OMB Capital Programming Guide

- » Basic reference
- » Replaces OMB A-109
- » Not prescriptive

- OMB training

- Continue Cooperation

- » American Project Management Forum

- Reporting/contract types?



# In Conclusion

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- A-11 Part 3 officially extends DoD-pioneered performance measurement to all agencies-*and* applies to DoD
- It effectively mandates Earned Value Management as the basis for performance-based management systems
- Earned Value Home Page:  
<http://www.acq.osd.mil/pm>

